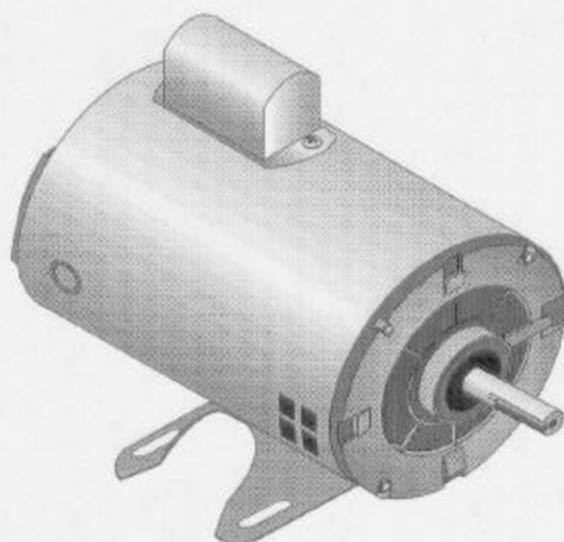


# ELECTRIC MOTOR

**Model 36549**

**ASSEMBLY and OPERATING INSTRUCTIONS**



3491 Mission Oaks Blvd. / Camarillo, CA 93011

Copyright © 1997 by Harbor Freight Tools. All rights reserved.  
No portion of this manual or any artwork contained herein may be reproduced in any  
shape or form without the express written consent of Harbor Freight Tools.

**For technical questions and replacement parts, please call 1-800-444-3353.**

---

## SPECIFICATIONS

HP:	1/2
Volts:	115/230
Full Load Amps:	8.5/4.25
Frequency:	60Hz
Speed:	1725 RPM
Phase:	Single
Frame:	56
Type:	SCS
Ambient Air Temperature:	104°F Maximum
Insulation Class:	B <sub>3</sub>
Duty:	Continuous

## SAVE THIS MANUAL

You will need the manual for the safety warnings and cautions, assembly instructions, operating procedures, maintenance procedures, trouble shooting, parts list, and diagram. **Keep your invoice with this manual. Write the invoice number on the inside of the front cover.** Keep both this manual and your invoice in a safe, dry place for future reference.

## SAFETY WARNING & CAUTIONS

**WARNING:** When using electric tools, machines, or equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury. **READ ALL INSTRUCTIONS BEFORE USING THIS TOOL!**

1. **KEEP WORK AREA CLEAN.** Cluttered areas invite injuries.
2. **OBSERVE WORK AREA CONDITIONS.** Do not use machines or power tools in damp, wet, or poorly lit locations. Don't expose to rain. Keep work area well lit. Do not use electrically powered tools in the presence of flammable gases or liquids.
3. **KEEP CHILDREN AWAY.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
4. **STORE IDLE EQUIPMENT.** When not in use, tools must be locked up in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **DO NOT FORCE THE TOOL.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool's capacities.
6. **USE THE RIGHT TOOL FOR THE JOB.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. Do not use a tool for a purpose for which it was not intended.

- 
7. **DRESS PROPERLY.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
  8. **USE EYE AND EAR PROTECTION.** Always wear ANSI approved chemical splash goggles when working with chemicals. Always wear ANSI approved impact safety goggles at other times. Wear a full-face shield if you are producing metal filings or wood chips. Wear and ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.
  9. **DO NOT ABUSE THE POWER CORD.** Do not yank it to disconnect it from the receptacle. Do not carry tools by the cord.
  10. **DO NOT OVERREACH.** Keep proper footing and balance at all times. Do not reach over or across running machines.
  11. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. The handles must be kept clean, dry, and free from oil and grease at all times.
  12. **DISCONNECT POWER.** Unplug when not in use, before servicing, and when changing accessories.
  13. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make it a habit to check that keys and adjusting wrenches are removed from the tool or machine work surface before plugging it in.
  14. **AVOID UNINTENTIONAL STARTING.** Be sure the switch is in the OFF position when not in use and before plugging in. Do not carry any tool with your finger on the trigger, whether it is plugged in or not.
  15. **OUTDOOR EXTENSIONS CORDS.** When the equipment is operated outdoors, use only extension cords intended for outside use. See chart under "Extension Cords: for the proper AWG rating depending on the length of the cord(s) being used.
  16. **STAY ALERT.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
  17. **CHECK DAMAGED PARTS.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn on and off properly.
  18. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
  19. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.

- 
20. **DO NOT OPERATE TOOL IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
21. **WHEN INSTALLING MOTOR, OBSERVE ALL NATIONAL AND LOCAL CODES.** Make sure to install, protect and fuse according to the latest issue of the National Electric Code, NEMA Standard Publication No. MG2, and local codes. Ground frames in accordance to the NEC Article 430. For general grounding information, refer to NEC Article 250.
22. **INSTALL GUARDS WHEN APPROPRIATE.** Make sure all moving parts, including the shaft and any attached accessories, are permanently guarded to prevent clothing and body parts from being caught.

### **UNPACKING**

Make sure the motor is intact and there are no loose parts. If the motor is not intact, contact Harbor Freight Tools at the number on the front cover for motor replacement. Do not use or install any motor that has shipping damage.

## WIRING

Your motor is designed for either 110-120V or 220-240V operation. Additionally, you can wire your motor for either clockwise or counterclockwise rotation.

**WARNING: ELECTRICAL SHOCK HAZARD.**  
If you have any doubts concerning the wiring of the motor, consult a qualified electrician.

### **External Wire Gauge Requirements**

Wire Size For 115 & 230 Volt Single Phase Circuits								
Distance – Motor to Fuse or Meter Box - Feet								
Motor HP	100 Ft.		200 Ft.		300 Ft.		500 Ft.	
	115V.	230V.	115V.	230V.	115V.	230V.	115V.	230V.
1/2	#10	#12	#8	#10	#6	#8	#4	#6

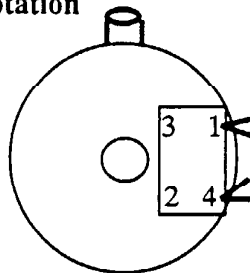
### **110-120V Operation, Internal Wiring**

Step 1: Remove the cover on the back of the motor.

Step 2: For **counterclockwise rotation**, connect the black and the white wires to Pole #4. Connect the red and the orange wires to Pole #1. Refer to Figure 1.

#### **110-120V Counterclockwise Rotation**

Black P in 4  
White P in 4  
Orange P in 1  
Red P in 1



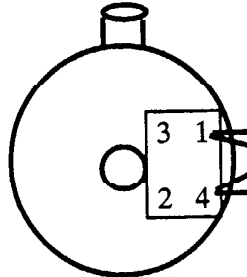
**Figure 1**

---

Step 3: For **clockwise rotation**, connect the red and the white wires to Pole #4. Connect the black and the orange wires to Pole #1. Refer to Figure 2.

**110-120V Clockwise Rotation**

Black P in 1  
White P in 4  
Orange P in 1  
Red P in 4



**Figure 2**

---

## 110-120V Operation, External Wiring

Step 1: Connect the neutral wire (white, typically) to Pole #4 (see Figure 3). The Figure is shown for *counterclockwise* rotation internal wiring, but is also valid for *clockwise* rotation when connecting external wires.

### 110-120V Counterclockwise Rotation with External Wiring

Black P in 4  
White P in 4  
Orange P in 1  
Red P in 1  
Green Ground

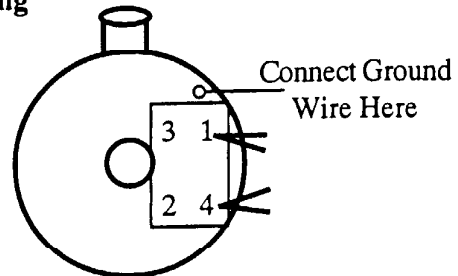


Figure 3

Step 2: Connect the hot wire (black, typically) to Pole #1.

Step 3: Connect the Ground wire (Green) up to the green screw. This procedure is very important. Failure to connect the Ground wire properly will result in a severe safety hazard.

Step 4: Replace the cover.

---

### 220-240V Operation, Internal Wiring

Remove the cover on the back of the motor.

For *counterclockwise* rotation, connect the black wire to Pole #4. Connect the red, the white and the orange wires to Pole #3. Refer to Figure 4.

#### 220-240V Counterclockwise Rotation

Black P in 4  
White P in 3  
Orange P in 3  
Red P in 3

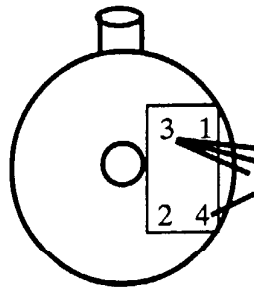


Figure 4

For *clockwise* rotation, connect the red wire to Pole #4. Connect the black, white and the orange wires to Pole #3. Refer to Figure 5.

#### 220-240V Clockwise Rotation

Black P in 3  
White P in 3  
Orange P in 3  
Red P in 4

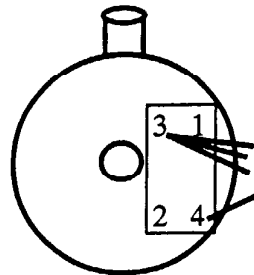


Figure 5



---

## 220-240V Operation, External Wiring

Step 1: Connect the neutral wire (white, typically) up to Pole #1. See Figure 6. The Figure is shown for *counterclockwise* rotation internal wiring, but is also valid for *clockwise* rotation when connecting external wires.

### 220-240V Counterclockwise Rotation with External Wiring

Black P in 4  
White P in 3  
Orange P in 3  
Red P in 3  
Green Ground

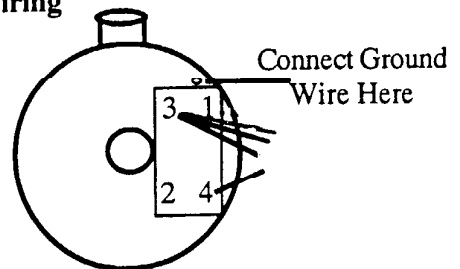


Figure 6

Step 2: Connect the live wire (black, typically) to Pole #4.

Step 3: Connect the Ground wire (Green) up to the green screw. This procedure is very important. Failure to connect the Ground wire properly will result in a severe safety hazard.

Step 4: Replace the cover.

---

## **MOUNTING THE MOTOR**

The ambient air temperature where the motor is to be installed cannot exceed 104°F. If it does, cooling must be provided to ensure the temperature stays within 104°F.

Do not allow the air vents to become blocked when locating the motor.

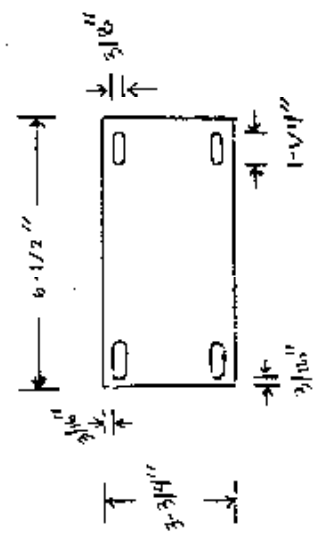
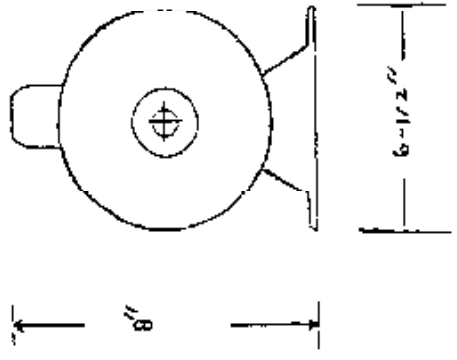
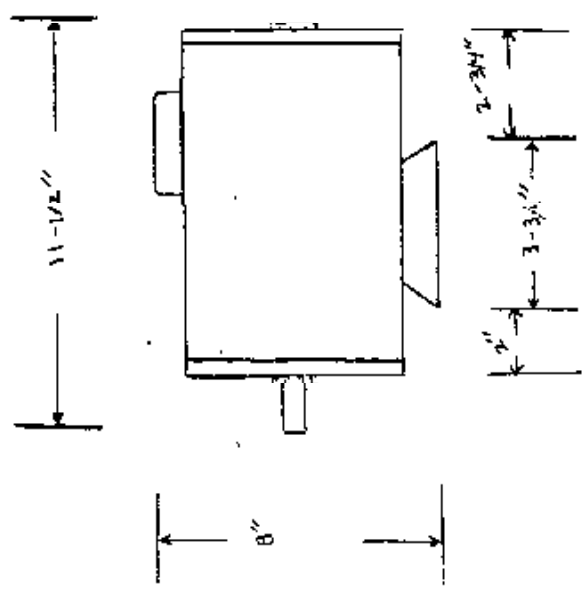
This motor should be installed indoors, in a clean dry and non-corrosive environment. There must be no flammables or flammable gasses present.

The height of the four feet must be within .010" of each other. If the base to which you are mounting the motor prevents this, use shims to achieve this specification.

Make sure all mounting hardware is securely fastened.

When connecting the direct drive shaft, make sure it is properly aligned or motor life will be significantly shortened.

SKETCH 36549 DEX. MOTOR ELECTRIC 1/2HP GEN. PWR.



BASE